



Websites that promote Montana artists

State of the Arts is compiling a list of Montana-based websites that promote Montana artists and performers. The list includes:

- **www.findartmontana.com:** the site is designed specifically to help visitors locate artists, studios and art as they travel in the state and enjoy the local culture. To participate, fill out the Artist Information Form located on the About Us page.
- **www.montanamusicians.com** and **www.montanabands.com:** Find musicians, collaborate and stay connected with other Montana musicians. Browse by location and price range.
- **montanaclay.org:** This website is a gathering of information about ceramics in Montana and features full-time active artists, craftsmen, schools, art centers, and galleries that are invested in the preservation, promotion and advancement of the ceramics arts in Montana.
- All ceramic artists and organizations in Montana that have a professional active clay practice, and would like to help promote ceramics in Montana may add a link to this web page.

“Dear Digit, there are so many terms and technicalities associated with digital images, I’m lost. Do I need to know the difference between JPG and GIF, DPI and PPI, resizing and compressing, etc.? If so, how can I keep them straight?”

There are three categories of terms that are essential to producing, using, and sharing digital images: file type, file ‘quality’ and file size. Let’s take a closer look at each category.

File Types

Files types are identified by their extensions. If you are using or dealing with RAW (.raw) images, you will want to have a more nuanced understanding of file types than we can address in a brief article. For the other types, some general rules apply. The table at the bottom of the page is a useful way to make sense of which specific uses each file type is designed for.

File Quality: Overview

The terms DPI (dots per inch) and PPI (pixels per inch) can be misleading and confusing. PPI is typically represented/referred to as DPI in photo metadata (EXIF files) and in most photo editing programs. In both cases, the concept deals with how much visual information the image contains per inch. The higher the number, the more information there is per inch of your image.

DPI and PPI can be reduced, which results in a blending of pixels and smaller file sizes. While DPI and PPI can technically be increased, the computer automatically generates extra pixels by matching them to nearby existing pixels. Doing so enlarges the file size and can result in very strange and unwelcome shifts in color and detail in images. As a result, it is advisable to create original images at the maximum DPI/PPI that may be needed; in practice, DPI and PPI are only reduced.

File Quality: Printing and viewing

PPI is technically a hypothetical digital number that can be manipulated with little concern as long as the image is only used digitally. DPI, however, is a real number that makes a big difference when printing images – an image printed at 300 dpi means 300 dots will be printed per inch to create the color in that spot on the print. So, 1200 dpi would mean 1200 dots per inch printed to create the color. Not enough dots/pixels = fewer dots per inch of color being printed = prints with less smooth blending of colors and edges.

DPI for most print jobs should be at least 300 for 5” to 10” images, and typically does not need to be higher than 400. If you print larger images, you may need to decide whether you need higher DPI (appropriate for fine art prints) or a lower DPI (appropriate for billboards and other large ad images which will be viewed from a distance).

A handy calculation can help you determine how large your image can be at a given DPI before it becomes pixelated, and can also help avoid having the picture cropped incorrectly by the printer: (target dimension 1 x target dpi) x (target dimension 2 x target dpi). Example: (6” x 300) x (4” x 300).

THE ARTIST’S TOOLBOX

Demystifying size and quality of digital images



Dear Digit provides resources, ideas and tips to address digital communications questions from an arts perspective. Pose your questions online at www.commnatural.com/deardigit.

File Quality and Type: Scanning

If you are creating a digital image by scanning it, the absolute minimum DPI you want to use is 300. Scanning at higher DPI settings means you are capturing more information. This takes longer, but can be important if you anticipate enlarging and printing the scanned images. Scanning at resolutions between 600-1200 dpi might seem like overkill in some situations, but might be exactly the right quality level for others.

If you have the option, it is advisable to scan images as TIFFs, as that file type has the greatest capacity to capture information. Once you have a high-resolution file, you can edit a copy and adjust dpi and file type to suit.

File Size: Shape/Dimensions

There are two ways of thinking about file size, and both are relevant for online and print uses. ‘Size as shape’ = dimensions. Most compact (point-and-shoot) cameras produce images with 4:3 dimension ratios while most DSLR cameras and 35mm film cameras produce images with a 2:3 ratio. These ratios can be written as pixel ratios or as inches or centimeters (for example: 1800x1200 pixels = 6”x4” inch print at 300 dpi), as in the calculation outlined above.

There are lots of ways of changing the dimensions of your image: cropping, resizing, resampling, changing the pixel ratio, etc. Your final purpose for the image will help you decide how to change the shape.

If you are uploading images to a social media or website platform, the platform’s help forums should provide the information you need to decide what dimensions are ideal for your image. If you are having your images printed, collaborate with your printer to determine the necessary dimensions. If you are printing your own images, use the information above to determine the dimensions and pixel ratio you need.

File Size: Image Data/Bytes

Generally, each pixel = 3 bytes of data for 8-bit RGB color (the amount of information provided to produce a color) and 6 bytes/pixel for 16-bit color. You may need to change the image data size for a host of reasons.

For online viewing or computer-only viewing, you may need high-quality or low-quality images at certain dimensions. For printing, you may need to have a high-quality image at a certain dpi. As with dimensions, your software, platform, and/or printer should be able to help you determine how large of a data file is needed.

Bottom line:

Digital images are fairly easy to distribute, but it is important to make sure the file quality and types are appropriate for your needs.

Dear Digit is penned Bethann Garramon Merkle, a Choteau native with a passion for the arts and our dynamic state. She is a communications consultant for nonprofit organizations, small businesses and individuals.

File Type	Good for...	Not so good for...	Clarification
GIF (.gif)	Small web graphics with a limited color palette	Photos & high-quality color-rich printing projects	GIF files are great for fast-loading web-only images like banners and buttons. They are small files (in terms of KB and MB), partially because the color information is limited to a blend of only 256 color options (a really limited range).
PNG (.png)	Web-based graphics	Photos & widespread online uses	PNG maintains color quality and file quality, while still producing a small-size file (in terms of KB/MB). This file type also supports transparency, so it’s useful for graphics, logos, etc. The downside is that many systems and programs are not compatible with PNG files.
JPEG (.jpg)	Web-based photos & small prints	Photo editing	JPEG is the most common format, and it is compatible with nearly all online platforms and computer software. JPEGs can be large files or can be made small enough to easily use online. However, every time a JPEG is edited and/or saved, the file quality is reduced (color and pixel information is simplified). This means you only want to edit copies, not your original file.
TIFF (.tiff)	Editing, archiving & high-quality printing	Web-based images	TIFF files retain all the color information, can be made transparent, and don’t degrade when edited and saved. The flip side is that TIFFs are usually large files which can be too large for email, social media, and other online uses.
EPS (.eps)	Large, high-quality printing, illustrations, logos	Web-based images	EPS files are more-or-less self-contained vector files, and are not based on pixels, so they can be expanded indefinitely without losing resolution. The benefit is that they are relatively small in size.